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TESTING
CNAS L0446

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Page 1 of 35

Test Report

Verified code: 417027

Report No.: E20240725192701-16

Customer: Lumi United Technology Co., Ltd

Address: Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China

Sample Name: Voice Mate H1

Sample Model: AT-R01E

Receive Sample Date: Aug.05,2024

Test Date: Aug.09,2024 ~ Aug.14,2024

Reference Document: AS/NZS 4268:2017

Test Result: Pass

Prepared by: Wen Wenwen
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Reviewed by: Wu Haoting
Wu Haoting

Approved by: Xiao Liang
Xiao Liang

GRG METROLOGY & TEST GROUP CO., LTD.

Issued Date: 2024-09-13

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E20240725192701-16	Original Issue	2024-09-05

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1. TEST RESULT SUMMARY

Test Item	Test mode	Test Requirement	Test Method	Test Result
1. Transmitter Part				
Maximum EIRP	Mode 1	AS/NZS 4268:2017 Clause 6.3	ETSI EN 300 328 V2.2.2/5.4.2.2.1	PASS
Power Spectral Density	Mode 1	AS/NZS 4268:2017 table 1 row 59	ANSI IEEE C63.10-2020 section 11.10	PASS
Occupied Channel Bandwidth & Operating frequency	Mode 1	AS/NZS 4268:2017 Clause 6.5 and Clause 6.6	ETSI EN 300 328 V2.2.2/5.4.7.2.1	PASS
Transmitter spurious emissions	Mode 1	AS/NZS 4268:2017 Clause 6.4	ETSI EN 300 328 V2.2.2/5.4.9.2.2	PASS
2. Receiver Part				
Receiver spurious emissions	Mode 2	AS/NZS 4268:2017 Clause 7.2	ETSI EN 300 328 V2.2.2/5.4.10.2.2	PASS

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2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT INFORMATION

Name: Lumi United Technology Co., Ltd
Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China

2.2 MANUFACTURER

Name: Lumi United Technology Co., Ltd
Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China

2.3 BASIC DESCRIPTION OF EUT

Product Name: Voice Mate H1

Product Model: AT-R01E

Trade Name: Aqara

Additional Model: AT-R01D

Model difference descriptions: They have the same software and hardware constructions including circuit diagram, PCB layout and electrical parts, except Model name and packaging are different, as they would distribute in different regions to satisfy subdividing market demands.

Power Supply: 3.0V DC supplied by button cell

Battery Specification: CR2450 3.0V DC

Frequency Range: Thread: 2405MHz-2480MHz

Modulation type: O-QPSK

Antenna Type: Internal antenna

Antenna Gain: 1.0dBi (Max.)

Sample No: E20240725192701-0001, E20240725192701-0003

Temperature Range: 0 °C ~ 50 °C

Hardware Version: V1.0

Software Version: V1.0.0.1

Note 1: The EUT antenna gain is provided by the applicant. This report is made solely on the basis of such data and/or information. We accept no responsibility for the authenticity and completeness of the above data and information and the validity of the results and/or conclusions.

Note 2:

The EUT have two colors, the one is white, the other is black, they have the same software and hardware constructions including circuit diagram, PCB layout and electrical parts, except color is different. All tests were performed on the AT-R01E model.

2.4 TEST MODE

Test mode 1: Thread fixed transmitting mode

Test mode 2: Thread receiving mode

2.5 FREQUENCY BAND AND THE TEST FREQUENCY

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
*11	2405	12	2410	13	2415	14	2420
15	2425	16	2430	17	2435	*18	2440
19	2445	20	2450	21	2455	22	2460
23	2465	24	2470	25	2475	*26	2480

* is the test frequency.

2.6 DESCRIPTION OF EQUIPMENT

The type of the equipment	<input type="checkbox"/> FHSS	<input checked="" type="checkbox"/> other forms of modulation			
Adaptive / non-adaptive equipment	<input checked="" type="checkbox"/> Non-adaptive Equipment	<input type="checkbox"/> adaptive Equipment without the possibility to switch to a non-adaptive mode	<input type="checkbox"/>	adaptive Equipment which can also operate in a non-adaptive mode	
The equipment has an implemented	<input type="checkbox"/> Frame Based equipment	<input type="checkbox"/> Load Based equipment	<input type="checkbox"/> non-LBT based DAA mechanism	<input checked="" type="checkbox"/> other	
Antenna Gain	<input checked="" type="checkbox"/> Antenna 1 1.0dBi	<input type="checkbox"/> Antenna 2 dBi	<input type="checkbox"/> Antenna 3 dBi	<input type="checkbox"/> Antenna 4 dBi	
Beamforming Gain	<input type="checkbox"/> Yes, dBi	<input checked="" type="checkbox"/> No			
Extreme operating conditions	<input checked="" type="checkbox"/> Operating temperature range:	<input checked="" type="checkbox"/> Min 0°C	<input checked="" type="checkbox"/> Max +50°C		

3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests and measurements refer to this report were performed by Shenzhen EMC Laboratory of GRG METROLOGY & TEST GROUP CO., LTD.

Add : No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District Shenzhen, 518110, People's Republic of China

P.C. : 518110

Tel : 0755-61180008

Fax : 0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025:2017.

China CNAS(L0446)

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4. MEASUREMENTS UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in ETSI EN TR 100 028-1 (i.15) and ETSI EN 100 028-2(i 8):

Measurement		Frequency	Uncertainty
Radiated Emission	Horizontal	30MHz~200MHz	4.0dB
		200MHz~1000MHz	4.1dB
		1GHz~12.75GHz	4.9dB
	Vertical	30MHz~1000MHz	3.9dB
		200MHz~1000MHz	4.2dB
		1GHz~12.75GHz	5.0dB

Measurement	Uncertainty
RF frequency	6.0×10^{-6}
RF power conducted	0.78dB
Occupied channel bandwidth	0.40dB
Unwanted emission, conducted	0.68dB
Humidity	6%
Temperature	2°C

Note:

¹⁾ This uncertainty represents an expanded uncertainty expressed at approximately the 95%.
This uncertainty represents an expanded uncertainty factor of $k=2$.

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5. EQUIPMENT AND TOOLS USED DURING TEST**5.1 TEST EQUIPMENT AND TOOLS**

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Maximum EIRP & Maximum e.i.r.p. spectral density & occupied channel bandwidth & Operating frequency				
Simultaneous sampling DAQ	TONSCEND	JS0806-2	21B8060365	2024-12-28
High and low temperature humid heat test chamber	FC	FPHC-23AW-40	FD202306015	2024-09-10
Spectrum Analyzer	R&S	FSW43	102072	2025-06-14
BT/WIFI System	TONSCEND	JS1120-3		
Transmitter spurious emissions & Receiver spurious emissions				
Spectrum Analyzer	Keysight	N9010A	MY55370330	2024-09-08
Spectrum Analyzer	R&S	FSV3044	101184	2025-07-19
Bi-log Antenna	Schwarzbeck	VULB9163	01279	2025-02-04
Horn Antenna	Schwarzbeck	BBHA9120D	02499	2024-09-11
Amplifier	Tonscend	TAP9E6343	AP20E806065	2025-03-01
Amplifier	Tonscend	TAP01018048	AP20E8060076	2025-03-01
Amplifier	Tonscend	TAP037030	AP20E8060081	2025-03-01
Test software	Tonscend	JS36-RSE/5.0.0.1		

Note: The calibration interval of the above test instruments is 12 months.

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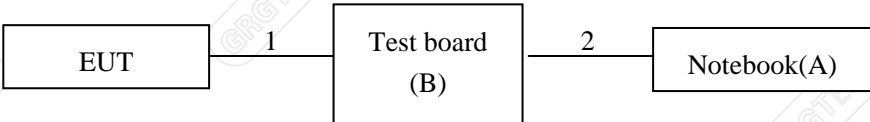
5.2 LOCAL SUPPORTIVE INSTRUMENTS

No.	Name of Equipment	Manufacturer	Model	Serial Number
A	Notebook	DELL	Latitude3300	2C6CFW2
B	Test board	/	/	/

No.	Cable Type	Qty.	Shielded Type	Ferrite Core(Qty.)	Length
1	Serial cable	1	No	0	0.2m
2	USB cable	1	No	0	0.5m

Note: The notebook is just used to produce fixed frequency transmitting.

5.3 CONFIGURATION OF SYSTEM UNDER TEST



Software version	Test level
QCOM_V1.0	2405MHz: 80 2440MHz: 80 2480MHz: 80

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6. RADIO TECHNICAL REQUIREMENT SPECIFICATION

6.1 MAXIMUM EIRP

Test Requirement: AS/NZS 4268:2017 Clause 6.3

Test Method: ETSI EN 300 328 V2.2.2/5.4.2.2.1

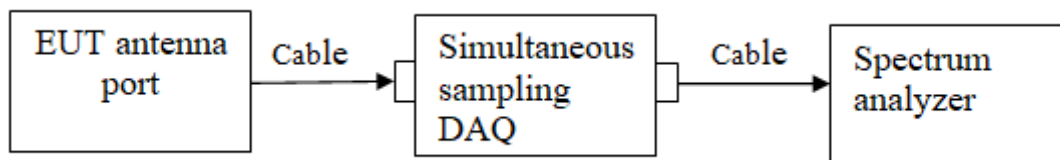
6.1.1 LIMIT

For adaptive equipment, the maximum RF output power shall be 20 dBm.

The maximum RF output power for non-adaptive equipment shall be declared by the manufacturer and shall not exceed 20 dBm. See clause 5.4.1 m). For non-adaptive equipment, the maximum RF output power shall be equal to or less than the value declared by the manufacturer.

This limit shall apply for any combination of power level and intended antenna assembly.

6.1.2 TEST CONFIGURATION



6.1.3 TEST PROCEDURES

Test procedure: Test procedure is according to Clause 5.3.2.2.1 of ETSI EN 300 328 V2.2.2

Test channel: Lowest channel, Middle channel, Highest channel

Test condition: Normal and extreme test conditions.

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6.1.4 TEST RESULTS

Test environment: Normal condition: 26.2℃/50%RH/101.0kPa

Extreme test conditions: Low Temp: 0℃

High Temp: +50℃

Test Engineer: Qin tingting

Test Date: 2024-08-09

Test Voltage: DC 3V

Test Condition	Test mode	Antenna	Frequency [MHz]	EIRP[dBm]	Limit[dBm]	Verdict
NTNV	Thread	Ant1	2405	9.08	20	PASS
			2440	8.45	20	PASS
			2480	8.37	20	PASS
LTVN	Thread	Ant1	2405	8.22	20	PASS
			2440	8.43	20	PASS
			2480	8.27	20	PASS
HTNV	Thread	Ant1	2405	9.07	20	PASS
			2440	8.46	20	PASS
			2480	8.40	20	PASS

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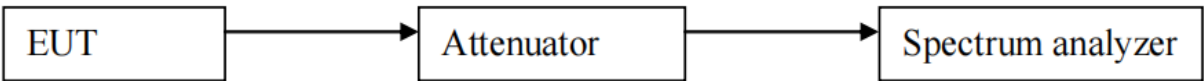
6.2 POWER SPECTRAL DENSITY

Test Requirement: AS/NZS 4268:2017 table 1 row 59
Test Method: ANSI IEEE C63.10-2020 section 11.10

6.2.1 LIMIT

The limit is 25mW per 3kHz.

6.2.2 TEST CONFIGURATION



6.2.3 TEST PROCEDURES

Test condition: Normal test conditions

Test channel: Lowest channel, Middle channel, Highest channel

Test procedure:

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- 3) Set the analyzer span to 1.5 times the DTS bandwidth. Set the RBW = 3 kHz. Set the VBW ≥ 3 RBW. Detector = peak. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW (use of a greater number of measurement points than this minimum requirement is recommended).
- 4) Repeat above procedures until all frequencies measured were complete.

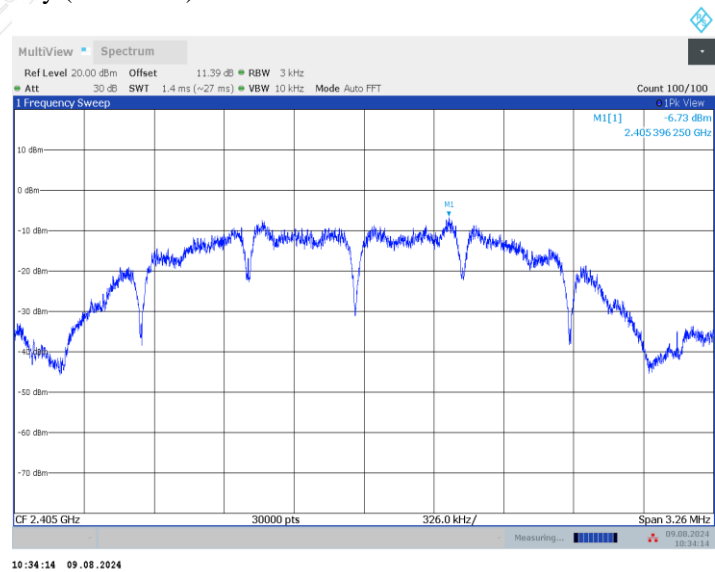
6.2.4 TEST RESULTS

Environment: 25.3°C/53%RH/101.0kPa
Tested By: Qin tingting

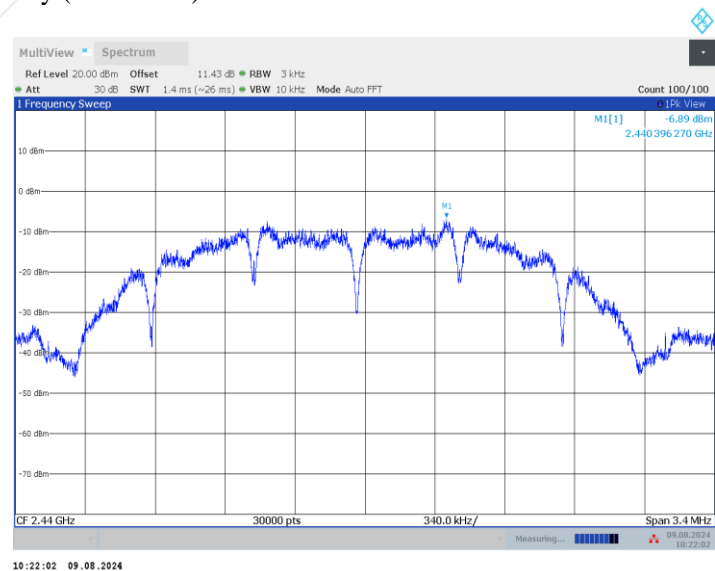
Voltage: DC 3V
Date: 2024-08-09

Ch Name	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
Lowest	2405	-6.73	8.00	Pass
Middle	2440	-6.89	8.00	Pass
Highest	2480	-7.18	8.00	Pass

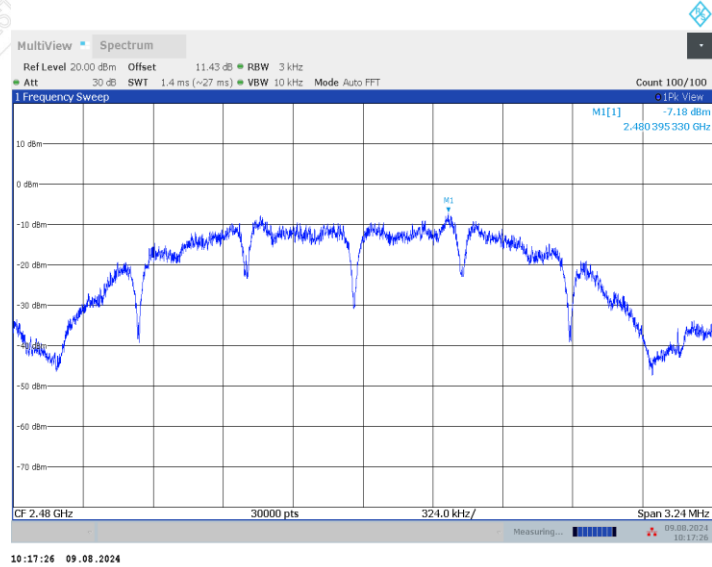
Lowest Frequency (2405MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



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6.3 OCCUPIED CHANNEL BANDWIDTH & OPERATING FREQUENCY

Test Requirement: AS/NZS 4268:2017 Clause 6.5 and Clause 6.6

Test Method: ETSI EN 300 328 V2.2.2/5.4.7.2.1

6.3.1 LIMIT

This requirement applies to all types of non-FHSS equipment.

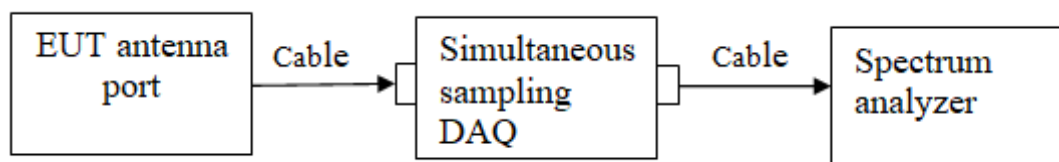
The Occupied Channel Bandwidth shall fall completely within the band given in table 2.

In addition, for non-adaptive equipment using wide band modulations other than FHSS and with e.i.r.p. greater than 10 dBm, the occupied channel bandwidth shall be less than 20 MHz.

Table 2: Service frequency bands

	Service frequency bands
Transmit	2 400 MHz to 2 483,5 MHz
Receive	2 400 MHz to 2 483,5 MHz

6.3.2 TEST CONFIGURATION



6.3.3 TEST PROCEDURES

Test condition: Normal test conditions.

Test channel: Lowest channel, Middle channel, Highest channel

Test procedure: Test procedure is according to Clause 5.4.7.2.1 of ETSI EN 300 328 V2.2.2

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6.3.4 TEST RESULTS

Test environment:Normal condition:
26.2℃/50%RH/101.0kPa

Test Engineer:Qin tingting

Test Date:2024-08-09

Test Voltage:DC 3V

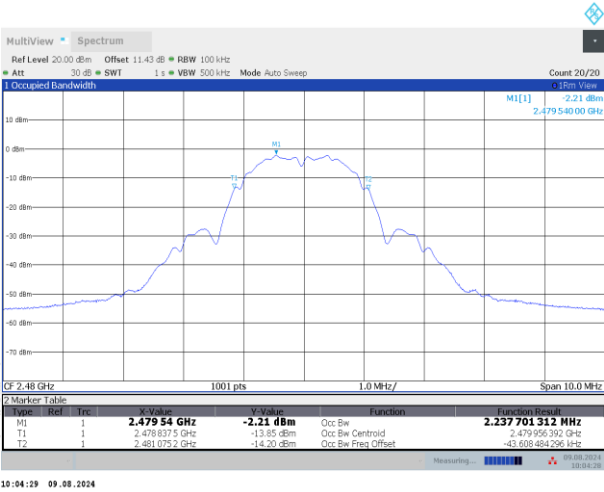
Test Mode	Frequency [MHz]	OCB[MHz]	F _L [MHz]	F _H [MHz]	Limit[MHz]	Verdict
Thread	2405	2.228	2403.8422	2406.0706	2400 to 2483.5	PASS
	2440	2.233	2438.8403	2441.0729	2400 to 2483.5	PASS
	2480	2.238	2478.8375	2481.0752	2400 to 2483.5	PASS



Lowest Frequency: 2405MHz



Middle Frequency: 2440MHz



Highest Frequency: 2480MHz

6.4 TRANSMITTER SPURIOUS EMISSIONS

Test Requirement: AS/NZS 4268:2017 Clause 6.4

Test Method: ETSI EN 300 328 V2.2.2/5.4.9.2.2

6.4.1 LIMIT

This requirement applies to all types of non-FHSS equipment.

The transmitter unwanted emissions in the spurious domain shall not exceed the values given in table 2. In case of equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted). For emissions radiated by the cabinet or emissions radiated by integral antenna equipment (without antenna connectors), these limits are e.r.p. for emissions up to 1 GHz and as e.i.r.p. for emissions above 1 GHz.

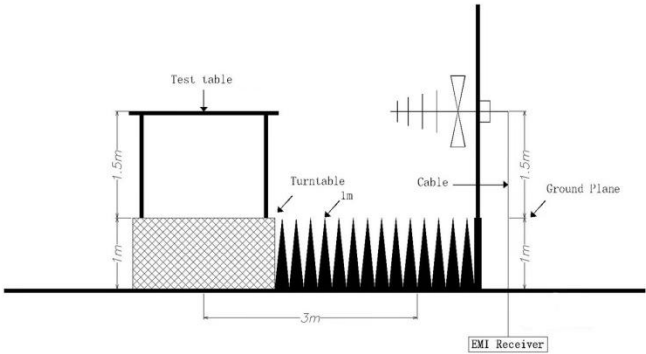
Table 2: Transmitter limits for spurious emissions

Frequency range	Maximum power	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 694 MHz	-54 dBm	100 kHz
694 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 12,75 GHz	-30 dBm	1 MHz

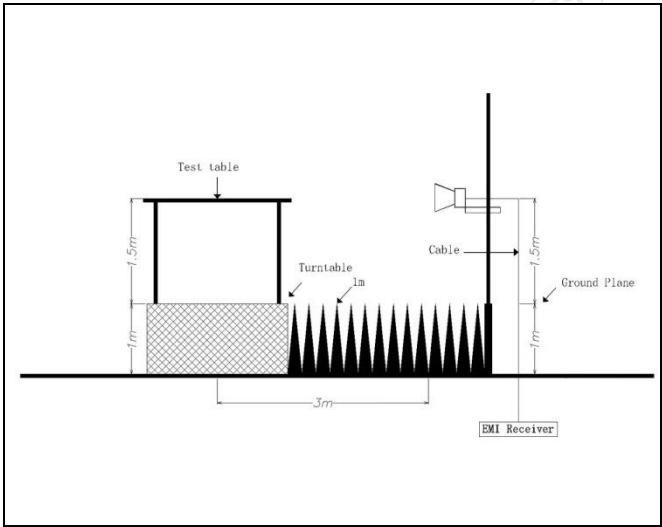
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6.4.2 TEST CONFIGURATION

30MHz~1000MHz



1000MHz~12750MHz



6.4.3 TEST PROCEDURES

Test condition: Mode 1

Test channel: Lowest channel, Highest channel

Test procedure: Test procedure is according to Clause 5.4.9.2.1 of ETSI EN 300 328 V2.2.2

Remark: Pre-test all data rate and channel, tested and recorded the worst case data.

6.4.4 DATA SAMPLE

Frequency [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Detector	Polarity
XXX	-49.71	-57.90	-30.00	27.90	-8.19	RMS	Horizontal

Frequency (MHz) = Emission frequency in MHz

Reading (dBm) = Uncorrected Analyzer / Receiver reading

Level (dBm) = Reading (dBm) + Factor (dB)

Limit (dBm) = Limit stated in standard

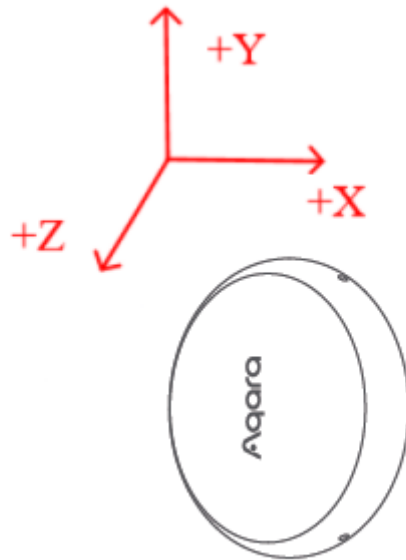
Margin (dB) = Limit(dBm) - Level (dBm)

RMS = Root Mean Square

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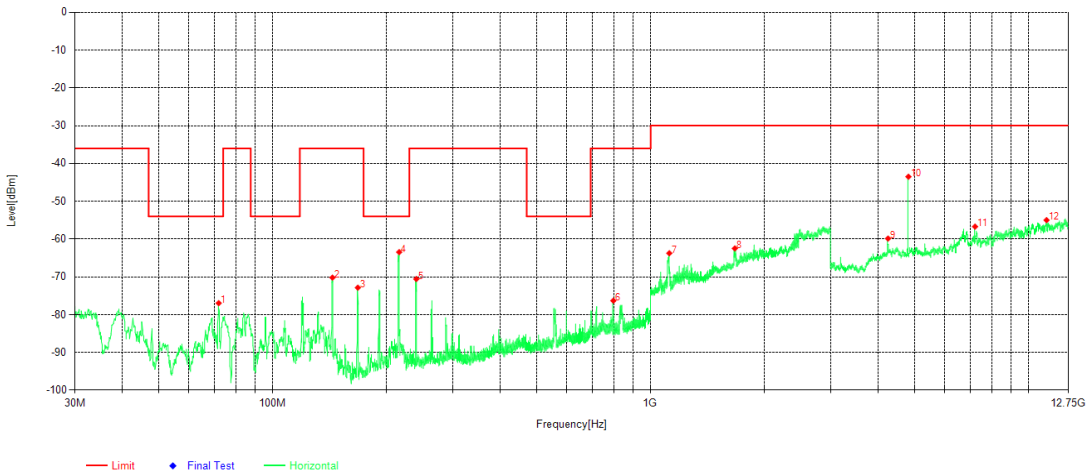
6.4.5 TEST RESULTS

The test are under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown the Z position only.

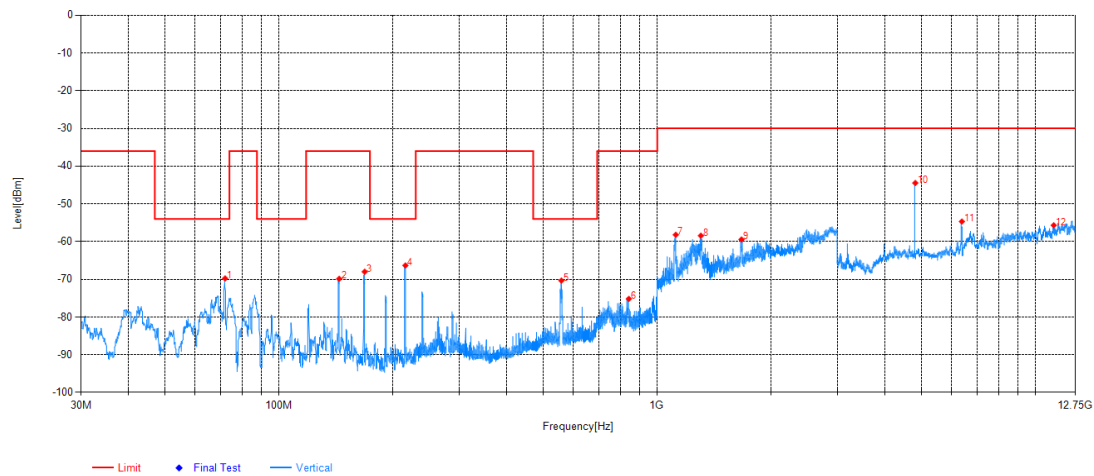


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Model:	AT-R01E	Test Date:	2024-08-14
Mode:	TX Thread_2405MHz	Voltage:	DC 3V
Environment:	23.8°C/67%RH/101.0kPa	Engineer:	Qin tingting



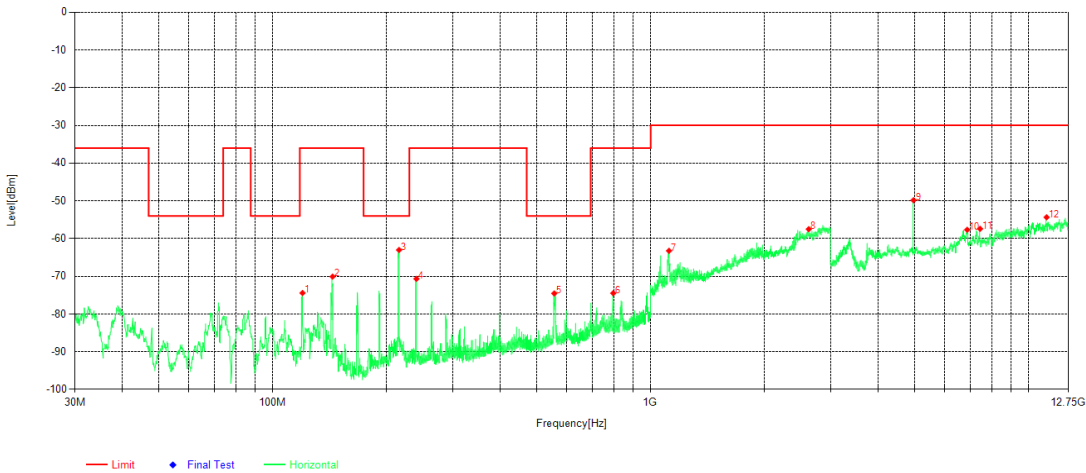
Suspected Data List								
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Detector	Polarity
1	72.001	-55.39	-76.96	-54.00	22.96	-21.57	RMS	Horizontal
2	143.975	-50.87	-70.21	-36.00	34.21	-19.34	RMS	Horizontal
3	168.031	-53.36	-72.87	-36.00	36.87	-19.51	RMS	Horizontal
4	216.143	-46.14	-63.46	-54.00	9.46	-17.32	RMS	Horizontal
5	240.005	-54.28	-70.57	-36.00	34.57	-16.29	RMS	Horizontal
6	796.979	-71.26	-76.31	-36.00	40.31	-5.05	RMS	Horizontal
7	1120.8	-61.77	-63.75	-30.00	33.75	-1.98	RMS	Horizontal
8	1669.8	-67.09	-62.48	-30.00	32.48	4.61	RMS	Horizontal
9	4246.05	-57.61	-59.87	-30.00	29.87	-2.26	RMS	Horizontal
10	4808.625	-41.58	-43.51	-30.00	13.51	-1.93	RMS	Horizontal
11	7212.975	-61.65	-56.71	-30.00	26.71	4.94	RMS	Horizontal
12	11150.02	-67.93	-54.99	-30.00	24.99	12.94	RMS	Horizontal



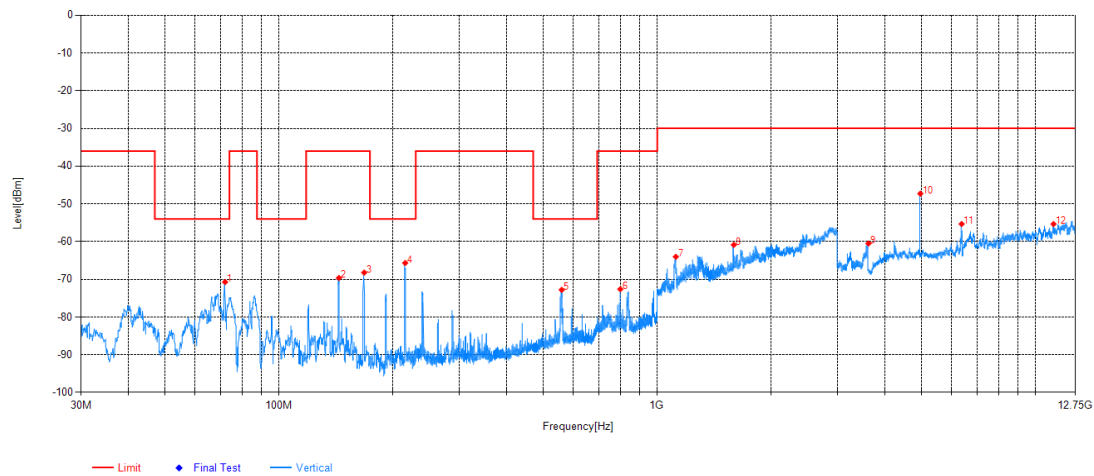
Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Detector	Polarity
1	72.098	-51.03	-69.77	-54.00	15.77	-18.74	RMS	Vertical
2	144.363	-50.62	-69.88	-36.00	33.88	-19.26	RMS	Vertical
3	168.613	-50.10	-68.00	-36.00	32.00	-17.90	RMS	Vertical
4	216.046	-48.82	-66.34	-54.00	12.34	-17.52	RMS	Vertical
5	558.262	-60.77	-70.34	-54.00	16.34	-9.57	RMS	Vertical
6	841.599	-70.83	-75.21	-36.00	39.21	-4.38	RMS	Vertical
7	1119.2	-56.58	-58.22	-30.00	28.22	-1.64	RMS	Vertical
8	1303.8	-60.21	-58.46	-30.00	28.46	1.75	RMS	Vertical
9	1670	-64.31	-59.45	-30.00	29.45	4.86	RMS	Vertical
10	4808.625	-42.76	-44.47	-30.00	14.47	-1.71	RMS	Vertical
11	6386.175	-56.33	-54.70	-30.00	24.70	1.63	RMS	Vertical
12	11174.4	-67.65	-55.70	-30.00	25.70	11.95	RMS	Vertical

Model:	AT-R01E	Test Date:	2024-08-14
Mode:	TX Thread_2480MHz	Voltage:	DC 3V
Environment:	23.8℃/67%RH/101.0kPa	Engineer:	Qin tingting



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Detector	Polarity
1	120.016	-55.91	-74.44	-36.00	38.44	-18.53	RMS	Horizontal
2	144.072	-50.74	-70.10	-36.00	34.10	-19.36	RMS	Horizontal
3	216.046	-45.71	-63.03	-54.00	9.03	-17.32	RMS	Horizontal
4	240.102	-54.39	-70.68	-36.00	34.68	-16.29	RMS	Horizontal
5	555.934	-65.26	-74.55	-54.00	20.55	-9.29	RMS	Horizontal
6	796.785	-69.47	-74.49	-36.00	38.49	-5.02	RMS	Horizontal
7	1118.8	-61.16	-63.25	-30.00	33.25	-2.09	RMS	Horizontal
8	2619.2	-69.83	-57.51	-30.00	27.51	12.32	RMS	Horizontal
9	4958.775	-48.83	-49.85	-30.00	19.85	-1.02	RMS	Horizontal
10	6877.575	-63.47	-57.67	-30.00	27.67	5.80	RMS	Horizontal
11	7438.2	-62.27	-57.42	-30.00	27.42	4.85	RMS	Horizontal
12	11153.92	-67.17	-54.36	-30.00	24.36	12.81	RMS	Horizontal



Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Detector	Polarity
1	72.098	-52.00	-70.74	-54.00	16.74	-18.74	RMS	Vertical
2	144.072	-50.38	-69.67	-36.00	33.67	-19.29	RMS	Vertical
3	168.031	-50.36	-68.24	-36.00	32.24	-17.88	RMS	Vertical
4	215.658	-48.17	-65.69	-54.00	11.69	-17.52	RMS	Vertical
5	559.329	-63.24	-72.80	-54.00	18.80	-9.56	RMS	Vertical
6	798.919	-67.35	-72.62	-36.00	36.62	-5.27	RMS	Vertical
7	1119.8	-62.44	-64.04	-30.00	34.04	-1.60	RMS	Vertical
8	1594.4	-65.28	-60.87	-30.00	30.87	4.41	RMS	Vertical
9	3617.175	-53.57	-60.51	-30.00	30.51	-6.94	RMS	Vertical
10	4958.775	-46.40	-47.29	-30.00	17.29	-0.89	RMS	Vertical
11	6376.425	-56.94	-55.35	-30.00	25.35	1.59	RMS	Vertical
12	11152.95	-67.81	-55.36	-30.00	25.36	12.45	RMS	Vertical

6.5 RECEIVER SPURIOUS EMISSIONS

Test Requirement: AS/NZS 4268:2017 Clause 7.2

Test Method: ETSI EN 300 328 V2.2.2/5.4.10.2.2

6.5.1. LIMIT

The spurious emissions of the receiver shall not exceed the values given in table 3.

In case of equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted).

For emissions radiated by the cabinet or for emissions radiated by integral antenna equipment (without antenna connectors), these limits are e.r.p for emissions up to 1 GHz and e.i.r.p for emissions above 1 GHz.

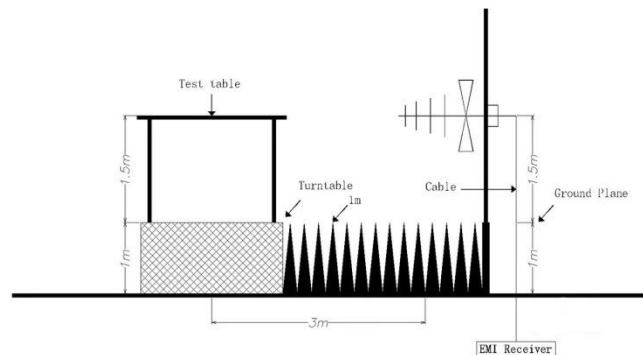
This device uses Radiated measurement.

Table 3: Spurious emission limits for receivers

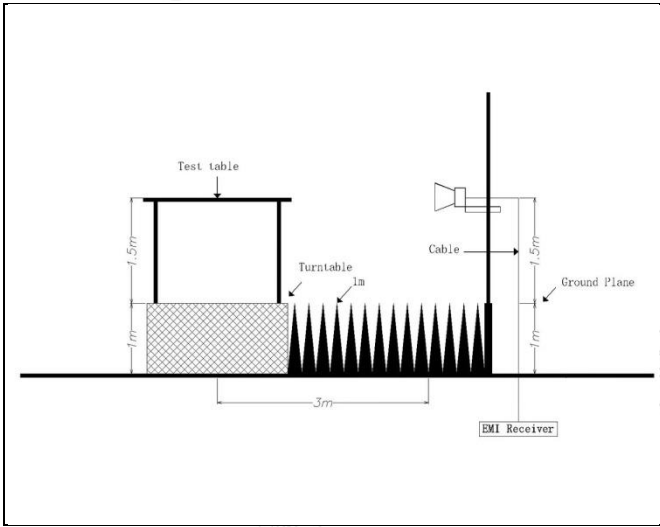
Frequency range	Maximum power	Bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 12,75 GHz	-47 dBm	1 MHz

6.5.2. TEST CONFIGURATION

30MHz-1000MHz



1000MHz-12750MHz



6.5.3. TEST PROCEDURES

Test channel: Lowest channel, Highest channel

Test condition: Mode 2

Test procedure: Test procedure is according to Clause 5.4.10.2.2 of ETSI EN 300 328 V2.2.2

Remark: /

6.5.4. DATA SAMPLE

Frequency [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Detector	Polarity
XXX	-58.02	-73.33	-57.00	16.33	-15.31	RMS	Horizontal

Frequency (MHz) = Emission frequency in MHz

Reading (dBm) = Uncorrected Analyzer / Receiver reading

Level (dBm) = Reading (dBm) + Factor (dB)

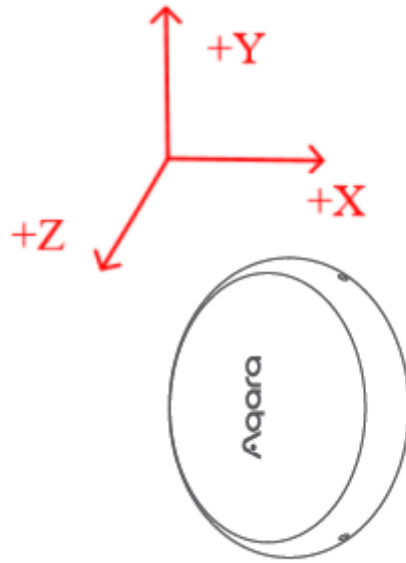
Limit (dBm) = Limit stated in standard

Margin (dB) = Limit(dBm) - Level (dBm)

RMS = Root Mean Square

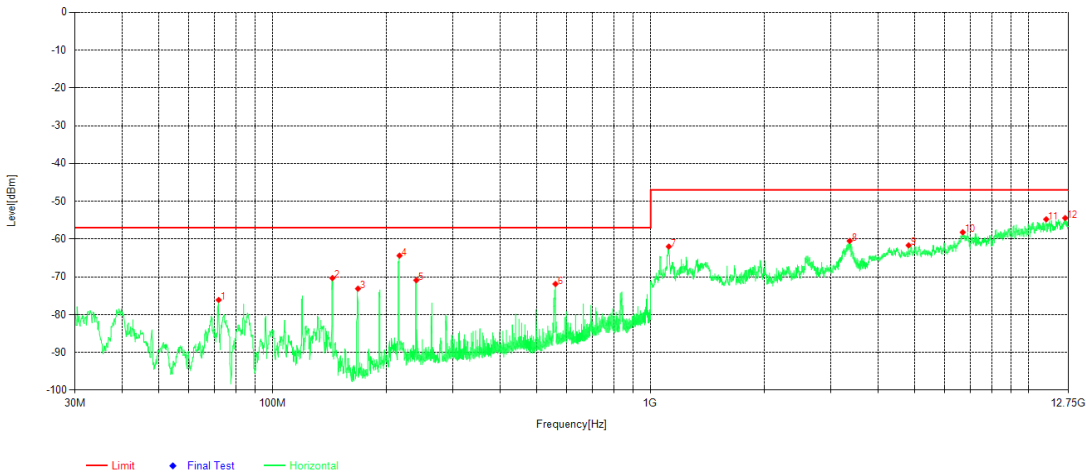
6.5.5. TEST RESULTS

The test are under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown the Z position only.



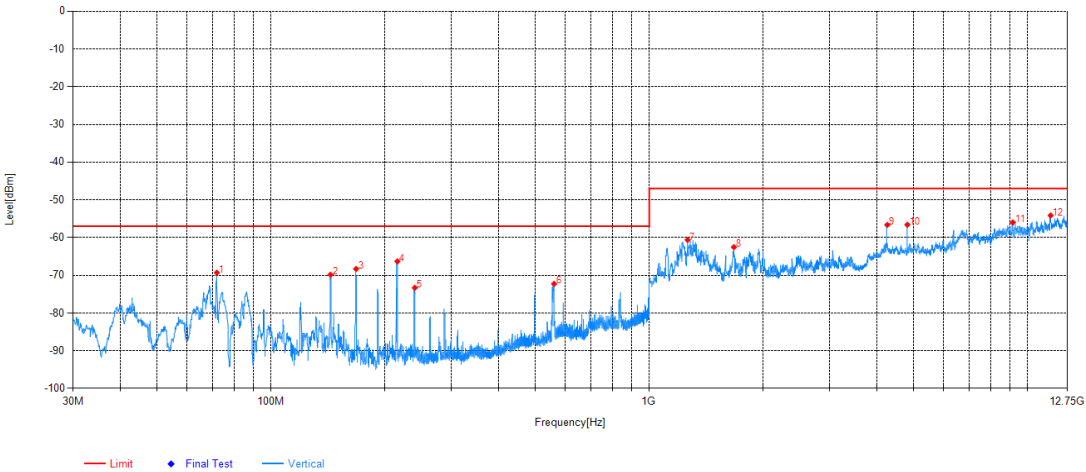
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Model:	AT-R01E	Test Date:	2024-08-14
Mode:	RX Thread_2405MHz	Voltage:	DC 3V
Environment:	23.8°C/67%RH/101.0kPa	Engineer:	Qin tingting



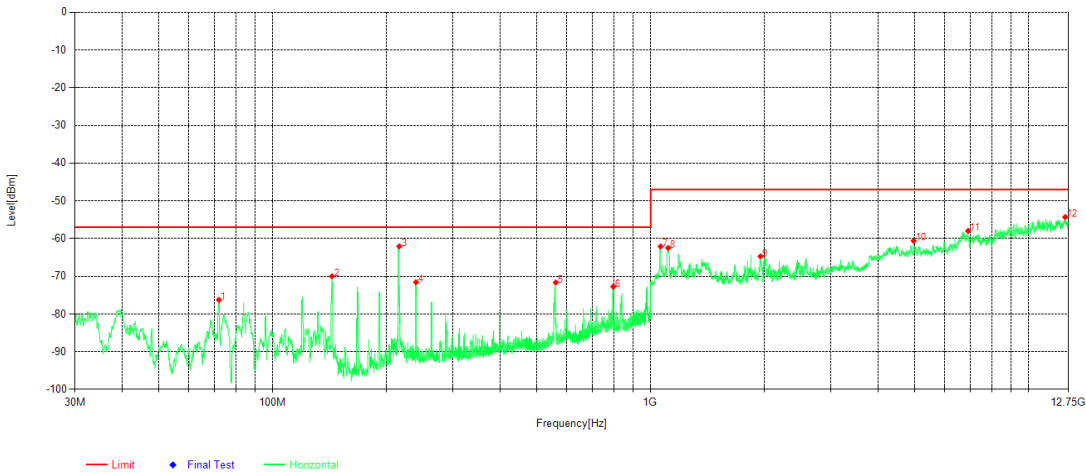
Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Detector	Polarity
1	72.001	-54.55	-76.12	-57.00	19.12	-21.57	RMS	Horizontal
2	143.975	-50.99	-70.33	-57.00	13.33	-19.34	RMS	Horizontal
3	168.225	-53.62	-73.13	-57.00	16.13	-19.51	RMS	Horizontal
4	216.628	-47.10	-64.40	-57.00	7.40	-17.30	RMS	Horizontal
5	240.005	-54.61	-70.90	-57.00	13.90	-16.29	RMS	Horizontal
6	560.202	-62.73	-71.89	-57.00	14.89	-9.16	RMS	Horizontal
7	1117.5	-47.77	-62.00	-47.00	15.00	-14.23	RMS	Horizontal
8	3360.575	-53.84	-60.51	-47.00	13.51	-6.67	RMS	Horizontal
9	4812.875	-59.78	-61.67	-47.00	14.67	-1.89	RMS	Horizontal
10	6695.225	-63.51	-58.21	-47.00	11.21	5.30	RMS	Horizontal
11	11132.02	-67.51	-54.78	-47.00	7.78	12.73	RMS	Horizontal
12	12495.02	-69.12	-54.44	-47.00	7.44	14.68	RMS	Horizontal

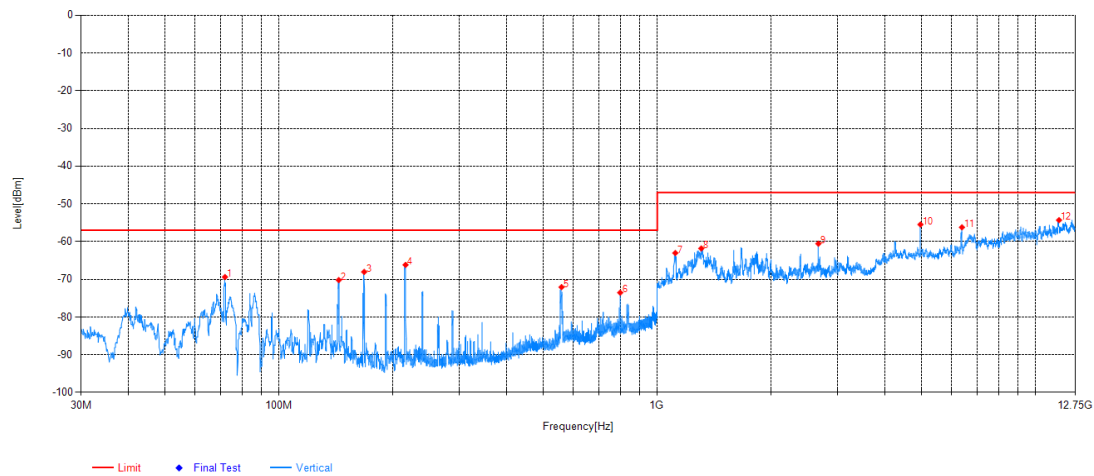


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Detector	Polarity
1	72.001	-50.61	-69.31	-57.00	12.31	-18.70	RMS	Vertical
2	143.684	-50.54	-69.86	-57.00	12.86	-19.32	RMS	Vertical
3	168.031	-50.43	-68.31	-57.00	11.31	-17.88	RMS	Vertical
4	216.046	-48.80	-66.32	-57.00	9.32	-17.52	RMS	Vertical
5	240.005	-57.87	-73.31	-57.00	16.31	-15.44	RMS	Vertical
6	560.396	-62.75	-72.27	-57.00	15.27	-9.52	RMS	Vertical
7	1263.2	-48.30	-60.63	-47.00	13.63	-12.33	RMS	Vertical
8	1674.45	-49.90	-62.54	-47.00	15.54	-12.64	RMS	Vertical
9	4257.1	-54.77	-56.64	-47.00	9.64	-1.87	RMS	Vertical
10	4812.875	-54.92	-56.60	-47.00	9.60	-1.68	RMS	Vertical
11	9142.75	-65.69	-55.98	-47.00	8.98	9.71	RMS	Vertical
12	11513.9	-67.94	-54.15	-47.00	7.15	13.79	RMS	Vertical

Model:	AT-R01E	Test Date:	2024-08-14
Mode:	RX Thread_2480MHz	Voltage:	DC 3V
Environment:	23.8℃/67%RH/101.0kPa	Engineer:	Qin tingting



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Detector	Polarity
1	72.098	-54.65	-76.25	-57.00	19.25	-21.60	RMS	Horizontal
2	143.587	-50.76	-70.02	-57.00	13.02	-19.26	RMS	Horizontal
3	216.337	-44.77	-62.08	-57.00	5.08	-17.31	RMS	Horizontal
4	239.617	-55.26	-71.58	-57.00	14.58	-16.32	RMS	Horizontal
5	561.269	-62.55	-71.65	-57.00	14.65	-9.10	RMS	Horizontal
6	796.882	-67.71	-72.74	-57.00	15.74	-5.03	RMS	Horizontal
7	1062.275	-47.59	-62.10	-47.00	15.10	-14.51	RMS	Horizontal
8	1112.8	-48.27	-62.49	-47.00	15.49	-14.22	RMS	Horizontal
9	1952.925	-52.95	-64.73	-47.00	17.73	-11.78	RMS	Horizontal
10	4962.1	-59.64	-60.61	-47.00	13.61	-0.97	RMS	Horizontal
11	6916.125	-63.28	-57.98	-47.00	10.98	5.30	RMS	Horizontal
12	12493.85	-68.95	-54.31	-47.00	7.31	14.64	RMS	Horizontal



Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Detector	Polarity
1	72.001	-50.71	-69.41	-57.00	12.41	-18.70	RMS	Vertical
2	143.975	-50.92	-70.22	-57.00	13.22	-19.30	RMS	Vertical
3	168.031	-50.16	-68.04	-57.00	11.04	-17.88	RMS	Vertical
4	216.143	-48.67	-66.19	-57.00	9.19	-17.52	RMS	Vertical
5	558.747	-62.52	-72.09	-57.00	15.09	-9.57	RMS	Vertical
6	798.337	-68.35	-73.55	-57.00	16.55	-5.20	RMS	Vertical
7	1116.325	-49.20	-63.05	-47.00	16.05	-13.85	RMS	Vertical
8	1307.85	-50.11	-61.83	-47.00	14.83	-11.72	RMS	Vertical
9	2666.15	-50.71	-60.56	-47.00	13.56	-9.85	RMS	Vertical
10	4962.1	-54.64	-55.48	-47.00	8.48	-0.84	RMS	Vertical
11	6389.725	-57.80	-56.22	-47.00	9.22	1.58	RMS	Vertical
12	11533.87	-68.23	-54.34	-47.00	7.34	13.89	RMS	Vertical

APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM

Please refer to the attached document E20240725192701-CE AUS-Test Photo.

APPENDIX B. PHOTOGRAPHS OF EUT

Please refer to the attached document E20240725192701-EUT photo.

----- End of Report -----